In the claims:

1.   A parallel processing system by an OS for single processors which

operates an OS for single processors and an application on a multiprocessor, and

5   controls a unit of work that can be parallelized within said application operating on one processor as a new unit of work on other processor, thereby conducting parallel processing by said multiprocessor with respect to said application.

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2.   A parallel processing system by an OS for single processors which

operates an OS for single processors and an application on a multiprocessor,

5   said multiprocessor being logically divided into two groups of a first processor side and a second processor side, and

controls a unit of work that can be parallelized within said application operating on a processor on said

10   first processor side as a new unit of work on a processor on said second processor side, thereby conducting parallel processing by said multiprocessor with respect to said application.

3.   A parallel processing system by an OS for single

processors which

operates an OS for single processors and an application on a multiprocessor,

5   said multiprocessor being divided into two groups of a first processor side and a second processor side,

operates said OS for single processors and said application on a processor on said first processor side, and

10   controls a unit of work that can be parallelized within said application as a new unit of work on a processor on said second processor side, thereby conducting parallel processing by said multiprocessor with respect to said application.

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4.   The parallel processing system by an OS for single processors as set forth in claim 1, wherein

the unit of work that can be parallelized within said application is created in advance on a processor on

5   said second processor side.

5.   The parallel processing system by an OS for single processors as set forth in claim 1, wherein

the unit of work that can be parallelized within said application is created and activated as a new unit

5   of work on a processor on said second processor side.

6.   The parallel processing system by an OS for

single processors as set forth in claim 2, wherein

said OS for single processors having a virtual

memory mechanism is mounted on the processor on said

5   first processor side and each processor on said second

processor side.

7.   The parallel processing system by an OS for

single processors as set forth in claim 6, wherein

the new unit of work on the processor on said

second processor side is controlled synchronously or

5   asynchronously with the unit of work on the processor on

said first processor side.

8.   The parallel processing system by an OS for

single processors as set forth in claim 6, wherein

synchronous processing and data transmission and

reception are enabled between units of work on the

5   processor on said first processor side and on the

processor on said second processor side.

9.   The parallel processing system by an OS for

single processors as set forth in claim 8, wherein

an inter-process communication unit which

executes synchronous processing and data transmission

5   and reception between said units of work by a semaphore

system and a message queue system is provided on the

processor on said first processor side and on the

processor on said second processor side.

10.   The parallel processing system by an OS for single processors as set forth in claim 1, wherein

a parallel processing unit which conducts control related to the unit of work including said creation of
5   the unit of work and an OS service unit which provides service of said OS for single processors to said unit of work are incorporated into each of said first processor side and said second processor side.

11.   The parallel processing system by an OS for single processors as set forth in claim 1, comprising

a control processing relay unit which conducts transmission and reception of a control signal and data
5   between said first processor side and said second processor side.

12.   The parallel processing system by an OS for single processors as set forth in claim 11, wherein

said control processing relay unit includes an interruption control device corresponding to each
5   processor and a communication region corresponding to each processor,

said interruption control device being formed of an interruption instruction unit which instructs other processor to interrupt, an interruption state holding

10   unit which holds information that an interruption is
made by an interruption instruction and an interruption
cancellation unit which clears an interruption, and

said communication region being formed of a
communication reason holding region which holds a

15   communication reason from a communication source
processor, a communication data holding region which
holds communication data to be communicated and a mutual
exclusive control region which locks a communication
region to ensure communication.

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13.   The parallel processing system by an OS for
single processors as set forth in claim 11, wherein

said control processing relay unit includes an
interruption control device corresponding to each

5   processor and a communication region corresponding to
each processor,

said interruption control device being formed of
an interruption instruction unit which instructs other
processor to interrupt, an interruption state holding

10   unit which holds information that an interruption is
made by an interruption instruction and an interruption
cancellation unit which clears an interruption, and

said communication region being formed of a
communication queue which holds a communication reason

15   from a communication source processor and communication
data to be communicated and a mutual exclusive control

region which locks a communication region to ensure
communication.

14.   The parallel processing system by an OS for
single processors as set forth in claim 10, wherein
        a proxy unit is provided on said first processor
side, which is associated with the unit of work on said
5   second processor side by a processing unit number to
conduct notification of various kinds of control signals
between the unit of work on said second processor side
and said OS for single processors.

15.   The parallel processing system by an OS for
single processors as set forth in claim 10, wherein
        said parallel processing unit, the OS service
unit, the control processing relay unit and the proxy
5   unit are incorporated in a modular fashion.

16.   The parallel processing system by an OS for
single processors as set forth in claim 10, wherein
        said parallel processing unit on said second
processor side is provided with a function of creating a
5   unit of work to be parallel-processed by other processor
on said second processor side.

17.   The parallel processing system by an OS for
single processors as set forth in claim 1, wherein

each said processor is mounted with said OS for

single processors having a virtual memory mechanism to

5   enable synchronous processing and data transmission and

reception between the units of work on said one

processor and said other processor.

18.   The parallel processing system by an OS for

single processors as set forth in claim 17, wherein

       an inter-process communication unit which

executes synchronous processing and data transmission

5   and reception between said units of work by a semaphore

system and a message queue system is provided on each

said processor.

19.   The parallel processing system by an OS for

single processors as set forth in claim 17, comprising

       a control processing relay unit which conducts

transmission and reception of a control signal and data

5   at the time of synchronous processing and data

transmission and reception between said units of work on

each said processor.

20.   A parallel processing program by an OS for single

processors, comprising the functions of:

       operating an OS for single processors and an

application on a multiprocessor, and

5   controlling a unit of work that can be

parallelized within said application operating on one processor as a new unit of work on other processor to conduct parallel processing by said multiprocessor with respect to said application.

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21.   A parallel processing program by an OS for single processors, comprising the functions of:

        operating an OS for single processors and an application on a multiprocessor, and

5   on a system in which said multiprocessor is logically divided into two groups of a first processor side and a second processor side,

        controlling a unit of work that can be parallelized within said application operating on a

10   processor on said first processor side as a new unit of work on a processor on said second processor side to conduct parallel processing by said multiprocessor with respect to said application.

22.   A parallel processing program by an OS for single processors, comprising the functions of:

        operating an OS for single processors and an application on a multiprocessor,

5   on a system in which said multiprocessor is logically divided into two groups of a first processor side and a second processor side,

        operating said OS for single processors and said

application on a processor on said first processor side,

10 and

controlling a unit of work that can be parallelized within said application as a new unit of work on a processor on said second processor side to conduct parallel processing by said multiprocessor with

15 respect to said application.

23. The parallel processing program by an OS for single processors as set forth in claim 20, comprising the function of

creating the unit of work that can be

5 parallelized within said application in advance on a processor on said second processor side.

24. The parallel processing program by an OS for single processors as set forth in claim 20, comprising the function of

creating and activating the unit of work that can

5 be parallelized within said application as a new unit of work on a processor on said second processor side.

25. The parallel processing program by an OS for single processors as set forth in claim 20,

which is executed on the processor on said first processor side and each processor on said second

5 processor side mounted with said OS for single

processors having a virtual memory mechanism.

26.   The parallel processing program by an OS for single processors as set forth in claim 25, comprising the function of

controlling the new unit of work on the processor

5   on said second processor side synchronously or asynchronously with the unit of work on the processor on said first processor side.

27.   The parallel processing program by an OS for single processors as set forth in claim 25, comprising the function of

enabling synchronous processing and data

5   transmission an reception between units of work on the processor on said first processor side and on the processor on said second processor side.

28.   The parallel processing program by an OS for single processors as set forth in claim 27, wherein

an inter-process communication function of executing synchronous processing and data transmission

5   and reception between said units of work by a semaphore system and a message queue system is executed on the processor on said first processor side and on the processor on said second processor side.

29.   The parallel processing program by an OS for single processors as set forth in claim 20, wherein

each of said first processor side and said second processor side is provided with a parallel processing

5   function of conducting control related to the unit of work including said creation of the unit of work and an OS service function of providing service of said OS for single processors to said unit of work.

30.   The parallel processing program by an OS for single processors as set forth in claim 20, comprising

a control processing relay function of conducting transmission and reception of a control signal and data

5   between said first processor side and said second processor side.

31.   The parallel processing program by an OS for single processors as set forth in claim 29, comprising

on said first processor side, a proxy function which is associated with the unit of work on said second

5   processor side by a processing unit number to conduct notification of various kinds of control signals between the unit of work on said second processor side and said OS for single processors.

32.   The parallel processing program by an OS for single processors as set forth in claim 29, wherein

said parallel processing function on said second
processor side creates a unit of work to be parallel-
processed by other processor on said second processor
side.

33.   The parallel processing program by an OS for
single processors as set forth in claim 20, wherein
        on each said processor mounted with said OS for
single processors having a virtual memory mechanism,
synchronous processing and data transmission and
reception is enabled between the units of work on said
one processor and said other processor.

34.   The parallel processing program by an OS for
single processors as set forth in claim 33, wherein
        an inter-process communication function of
executing synchronous processing and data transmission
and reception between said units of work by a semaphore
system and a message queue system is executed on each
said processor.

35.   The parallel processing program by an OS for
single processors as set forth in claim 33, wherein
        a control processing relay function of conducting
transmission and reception of a control signal and data
is executed at the time of synchronous processing and
data transmission and reception between said units of

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work on each said processor.